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Some Comments on the Proposed International List of Animal Diseases*

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PRAGUE

Perhaps only those closely connected with statistical matters and acquainted with the defects of our present scientific terminology can fully appreciate the work done by the veterinary staff of the Veterinary Research Institute, Onderstepoort, in compiling a draft of an International List of Animal Diseases, presented to the Thirteenth International Veterinary Congress. As, so far as I am aware, there has hitherto been no response to this excellent undertaking in the matter of veterinary publicity, one feels obliged to proclaim that the work of Dr. Du Toit, and of his colleagues, is not entirely forgotten, and to express the hope that it may become the object of careful consideration among scientific workers throughout the world.

All beginnings are difficult and the authors of the list are well aware that amendments may become necessary till a final list will be reached, but the real value of the first attempts on a new ground will soon be recognised by all trying further steps in the same direction. The amount of work to be done, before we gain a definite list of animal diseases, will be apparent at the next International Veterinary Congress. It seems that an entire congress could be devoted to consideration of that matter only. If I try to make some comments on the proposed list, I would like to draw attention to this unsolved problem and to open a discussion able to facilitate the duties of the next congress.

In general, there can be no doubt that veterinary statistics must distinguish strictly between the various kinds of animals, should the desired economic and scientific effect be attained. It is therefore possible to compile a list for every known sort of animal. But as many diseases are common to several sorts of animals I would prefer only one list, containing the diseases of all known animals; the data must, however, be given in particular for every species. It would be of great assistance to the practitioner, compelled to deal with the complete list, if to the official name of every disease could be added the species of host in which it occurs or has been observed.

*This article was received from the author before the outbreak of war.

As far as terminology is concerned, I would suggest that the international list be compiled in Latin only and that it be left to the various national committees to add the terms in their own language. Unfortunately the Latin terminology of the diseases of animals is far from perfect, *e.g.*, "adenitis equorum" has in general nothing to do with real glands and it is a misuse to speak of lymphatic glands instead of nodules. Without going into further details, it is evident that many Latin terms need first to be created, others simplified or amended. The issue of an international index creates the opportunity to dismiss obsolete terms and to introduce new ones. With regard to synonyms the most suitable ones should be selected and designated as such; other names should be given in brackets, incorrect and wrong terms with an indication that they should not be used. From the information given in this way the list may fulfil a valuable educational task in the future.

Because the object of veterinary statistics is prevention, care must be taken to use diagnoses founded according to aetiological relationships as far as possible. Terms referring only to one symptom should be replaced by terms revealing the cause of the disease.

The problem of classifying the diseases into groups and of arranging them in a suitable manner is already delicate enough. The list referred to above shows 18 groups comprising 107, 13, 12, 5, 12, 8, 10, 12, 11, 11, 2, 6, 2, 4, 9, 1, 25 and 2 diseases respectively. It seems obvious that the first group—so much the largest—should be divided into at least two groups. The third group, called "diseases of the endocrine glands, nutritional and deficiency diseases, diseases of metabolism, rheumatism" could perhaps be called with greater brevity, "constitutional and other general diseases."

From the point of view of practice, I would suggest that a new group be added for cases that, in effect, may not be diseases at all, but cause economic losses or demand treatment and veterinary supervision, *e.g.*, gravidity, normal parturition, castration, ovariotomy, artificial abortion, artificial insemination, cosmetic operations—in short, surgical operations performed

on a sound animal. One possible division of animal diseases into groups might be the following:—

Index Morborum Animalium Internationalis

i. *Morbi infectiosi.*
ii. *Morbi ex invasione parasitaria.*
iii. *Tumores.*
iv. *Morbi constitutionis et ceteri morbi totales.*
v. *Morbi sanguinis et organorum haemopoeticorum.*
vi. *Morbi apparatus nervorum.*
vii. *Morbi organorum sensuum.*
viii. *Morbi organorum circulationis sanguinis et lymphae.*
ix. *Morbi apparatus respiratorii.*
x. *Morbi apparatus digestivi.*
xi. *Morbi apparatus urogenitalis.*
xii. *Morbi graviditatis, partus et puerperii.*
xiii. *Morbi integumenti et texturae subcutaneae.*
xiv. *Morbi organorum locomotionis.*
xv. *Anomaliae congenitales.*
xvi. *Morbi juvenilium.*
xvii. *Morbi ex senectute.*
xviii. *Affectiones ex causis externis.*
xix. *Casus indefiniti.*
xx. *Casus, qui non sunt morbi.*

A further question has reference to the arrangement of the terms of diseases in the groups themselves. An alphabetical arrangement might be advantageous for the locating of well-known terms in a known group, but I doubt whether such an arrangement would render superfluous an appendix giving all terms in alphabetical order. It would be more suitable, in my opinion, to arrange the diseases according to their sanitary and economic importance. As every group must contain a special number of diseases that have not been properly specified, similar common headings could be found for diseases of no economic or sanitary importance and also for diseases of species, occurring rarely and to be found only in a few countries.

BULL LICENSING

The Ministry of Agriculture states that, arising out of the recent announcement of the resumption of bull licensing, it has come to the notice of the Ministry of Agriculture that some owners of bulls are under the impression that no application for a licence is necessary in the case of bulls that attained the age of ten months during the few weeks preceding the announcement of the resumption of licensing. This is incorrect, and the owner of any such bull should make application forthwith in the usual way for a licence to keep the bull.

Owners of bulls are also asked to note that under the revised arrangements now in force neither the vendor nor the purchaser of a licensed bull is required to notify the Ministry in connection with the transfer of a licence although the vendor must still, as previously, deliver the licence to the purchaser.

GRASS DISEASE OF HORSES AND GAME PRESERVATION; THEIR POSSIBLE CORRELATION: AN HYPOTHESIS AND AN APPEAL

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Grass Disease.—This disease is generally regarded as having made its first appearance about 1907 when Messrs. Spreull met with a number of cases in horses grazing near Barry Camp. It is thus a comparatively new disease. It is now recognised as occurring in many parts of Scotland and Northern England and to a much less extent in most of the rest of England. More recently, it has been met with in Brittany by Robin and Belloc (1930) and in Belgium by Middelem and Jonckheere (1930). Mr. Nairn drew my attention to a paper entitled "Acute Hydrogastritis of Horses" (Miller, 1939) in which a condition closely resembling grass disease is described as occurring in Colorado. For descriptions of the disease the reader is referred to articles by Nairn (1922) and by Pool (1928) and Greig (1928) and the discussions on these papers. The aetiology of the condition is unknown. The failure of attempts to affiliate the disease with equine botulism and with Borna disease and the lack of success by workers in various sciences to find the cause go to strengthen a belief that the disease is of peculiar origin.

Game Preservation.—By this term is here meant the destruction of predatory animals such as the wolf, fox, polecat, pine-marten, wild cat, stoat, weasel, eagle, kite, raven, crow, hawk, magpie, jay, so that pheasants, partridges, grouse, domestic fowls, hares, etc., are protected from their natural enemies. In addition, hand-rearing of these game birds is also carried on in some areas. Ritchie (1920) has collected data showing the enormous slaughter of such predatory animals in Scotland. The extermination of many of the larger of these animals has been practically completed by previous generations and it is mostly the smaller ones which claim the attention of the present-day gamekeeper. A study of literature on natural history shows that this process of extermination of these species has also progressed in England, and that their lot on the mainland of the Continent of Europe is much happier than in the island country of Britain.

Hypothesis.—That there is a correlation between grass disease and game preservation.

Reasons for Propounding this Hypothesis.—(*i*) From a map (unpublished) showing the incidence of grass disease in Scotland in 1928 prepared by Mr. W. A. Pool, late Director of the Animal Diseases Research Association, it can be observed that in that year grass disease was

prevalent in most areas of arable land in Scotland with the remarkable exception of the industrial belt of the Forth and Clyde area. In industrial areas game preservation is much less extensively practised due to the disturbing activities of poachers, boys, dogs and domestic cats being too great to allow of game preservation being a success. In addition in areas within this industrial belt fox hunting is carried on and thus the fox receives a measure of protection and can play its part as a predator and a carrion destroyer.

(*ii*) Cases of grass disease in this industrial belt are rather more numerous to-day than in 1928 but, although no map of incidence is available, it is undoubtedly the case that grass disease is here still much less prevalent than in game-preserving areas. Several veterinary practitioners in the Lothians have kindly allowed the author to investigate the conditions of occurrence of a number of their cases and in nearly all it has been found that game preservation is carried on locally either on the farm itself or near by.

A few "exceptions" to the above have been met with among the cases personally investigated and from information kindly supplied by two Scottish practitioners exceptional cases appear to occur in their districts. These do not necessarily invalidate the above hypothesis as it must be remembered that the whole of Britain is now, in terms of the above, a game preserve and indeed in every one of these "exceptional" cases personally investigated by the author active game preservation was being carried on within a few miles of the *locus* of occurrence.

(*iii*) A recent paper (Duncan, 1938) shows that the home of the magpie in Scotland at the present time is the industrial belt and that in suitable terrain elsewhere its occurrence is local, depending largely upon the activities of gamekeepers. What is of particular interest in this connection is the historical account which shows that the magpie used to be relatively common in the north and east counties of Scotland, but that now, owing to severe persecution during the latter half of last century and up to the present time, it is practically exterminated except in a few areas in Aberdeenshire. It is well known that it is the north-eastern counties of Scotland that have suffered so severely in the past.

The carrion crow was abundant in part of the Lothians in 1912-13 (Notes, *Scot. Nat.*, 1913), and is still common in this part (author's observations). A record (Scottish Land Enquiry Committee, 1914) shows that the number of gamekeepers in Scotland in 1881 was 4,246 and in 1911 it was 5,919, an increase of 1,673.

(*iv*) Regarding the occurrence of the disease in England and Wales it is apparent from the discussion on a paper by Brown (1923) that, if occurring at all, it had been very rare in the Midlands of England up to that time nor have records of the occurrence of the disease in this area been published, to the author's knowledge, since that date. Much of the Midlands is highly industrial and in addition there are in England and Wales many counties including extensive areas of the Midlands where the sport of fox hunting flourishes and the fox is sacrosanct. That fox hunting is more patronised in England and Wales than in Scotland is evident from figures supplied in "Everyman's Encyclopaedia" (1931-32) which states that the number of hunts in 1931 in England and Wales was 183 and in Scotland 10.

The disease is more prevalent in the North of England (Mayall, 1927; Rigby, 1928; Campbell, 1936) and in parts of Lincolnshire (Dickinson, 1928; Weighton, 1938). An area of low incidence lies in Essex and Herts (Bennett, 1929; Elmes, 1936; Wylie, 1936). In Wiltshire there is an area of comparatively high incidence (Holmes, 1936) and cases are recorded from the surrounding counties of Gloucester, Oxford, Berks, Hants, and West Sussex (Male, 1922; Masheter, 1922; Dunlop, 1928; Tutt, 1937). It is apparent that those recorded cases have occurred in counties which are mainly non-industrial.

To what extent game preservation is practised in these areas at the present time the author has no definite information. It is of interest to read (*Country Life*, 1903), "We hear of many counties where owners, having learned more about the requirements and habits of partridges, have both run Norfolk very close and in a good many places beaten her for the numerical championship and partridge supremacy—Wilts, Dorset, Yorkshire and Shropshire to instance some." That game preservation is carried on extensively in England and Wales is evident from returns (Census, 1931) which show that there were 10,706 gamekeepers and gamewatchers in England and Wales at that time. In 1901 the number of gamekeepers is given as 16,677 and 17,148 in 1911. (Census returns.)

In at least one county, namely, Norfolk, there is *prima facie* a discrepancy in that it is a famous game preserve from which carrion crows and magpies have been practically exterminated, (Saunders and Clark, 1927) and the county is said to have been "unhampered with the society of foxes" (*Country Life*, *loc. cit.*) yet to the author's knowledge no cases of grass disease have been recorded as occurring in this county. However, Seebohm (1883), Thomson (1910), Thorburn (1915) and Saunders and Clark (*loc. cit.*) comment on the autumn migration westwards and southwards of flocks of hooded crows from Northern Europe. The eastern and south-eastern counties, south to Kent and west to the Midlands and Isle of Wight, receive a share of these migrants. In the spring these crows leave again for their northern breeding grounds (see discussion).

(*v*) Grass disease does not appear to be present in Ireland. In this country hooded crows and magpies are stated to be common and resident (Thorburn, *loc. cit.*; Saunders and Clark, *loc. cit.*) and fox hunting is, in at least many parts, a favourite sport. The number of hunts in Ireland in 1931 was 26 ("Everyman's Encyclopaedia," *loc. cit.*).

The author has no definite information regarding the conditions of occurrence of the disease on the mainland of the continent of Europe. It may be of significance that it should have made its appearance in Brittany, a region whose geographical situation would render it likely to suffer from a lack of migration of predators should these be locally destroyed.

To determine whether the conditions of occurrence of cases in Belgium conform to the above hypothesis, further knowledge would be required. The cases there may be on a par with those few cases in Essex and Herts, both areas being in the line of migration of the hooded crows referred to above. In both these areas all recorded cases seem to have been subacute.

If this be grass disease which is described in the article by Miller (*loc. cit.*) its appearance in America may be related to the increased attention now being given to game preservation in that country. ("Encyclopaedia Britannica," 1929; Wetmore, 1936; Lloyd, 1937.)

Discussion.—Attempts to explain the occurrence of this disease on the grounds of changed methods of agriculture fail to carry conviction on account of the fact that many cases of the disease have occurred on pastures which have not been ploughed or otherwise artificially treated. The tendency for the disease to be sporadic and erratic in its occurrence within an affected area points to the likelihood of the aetiological agent being in some way associated with animal life.

Grass disease has its greatest incidence in an island country where game preservation is probably of longer duration and more intense than in any other area on this planet. On the mainland of the continent of Europe any local destruction of these predatory animals can be replaced by migration from surrounding territory but in an island country this cannot occur at all in the case of mammals, and Scotland and north England are too far north to receive any benefit from the winter migration of hooded crows. It is in Scotland and north England that the disease is and has been most prevalent. More recently the disease has made its appearance in apparently relatively high incidence in Wiltshire, an area again removed from the stream of migration of these birds. The possible great importance of industrialism and the sport of fox-hunting in mitigating the incidence of the disease has already been stressed.

If the winter visit of migrating crows from Northern Europe can influence the incidence of the disease (see paragraph on conditions in Norfolk above) it is an important clue to the aetiology in that, as these crows leave these areas before the grass disease "season" begins, it is an indication that some aetiological factor is capable of being removed from these areas in winter time. In this connection it is important to remember that cases of grass disease do occur during the winter months.

The food of the hooded and carrion crows is carrion, poultry, the eggs of birds, leverets, moles, rats, fish, mussels, the refuse of the shore, insects, grubs, grain and fruit (Saunders and Clark, *loc. cit.*).

In several instances the author has found putrefying dead animals on the pastures at the time of occurrence of cases and in others there has been a history of dead animals having been found on the farms earlier in the year of occurrence. On another occasion a refuse heap containing fish offal was found in the corner of a field where three cases of the disease occurred. In one of the "exceptions" referred to above, an only partially buried decayed sheep carcase was found in the field of occurrence.

At the Moredun Institute the author carried out a small number of experiments in which horses were given, *via* stomach tube, suspensions of parts of carrion collected from pastures where grass disease had occurred and also, at the Royal (Dick) Veterinary College, guinea-pigs were fed with suspensions of the organs of rabbits killed on farms where cases had occurred and allowed to putrefy for varying periods up to 32 days.* These experiments failed to demonstrate the presence of a toxin in such carrion. Such results coupled with the fact that the horse is a clean feeder would appear to indicate that if grass disease has any association with unconsumed carrion, it is an indirect rather than a direct one.

Although in this discussion attention is drawn to a possible association with unconsumed carrion, game preservation has also other effects, *e.g.*, it gives small birds and mammals an added opportunity to multiply and these in turn may upset some other balance.

Grass disease is a *new* disease indicating that a *new* set of circumstances has arisen which allows of its occurrence. The full force of any effect which game preservation may have on the web of life must also be *new* as the history of wild life in Britain shows that the process of destruction of predatory and carrion feeding animals has been going on in our island country for centuries and in Scotland has more recently

*These rabbits were kindly sent to the author by veterinary practitioners in Angus, Fife and Perthshire.

been intensified, and one may postulate that the arrival of grass disease may have signalled the time of the breaking down of some protective agency maintained by these predators with the consequent liberation of the grass disease aetiological factor.

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In the above paper an attempt has been made to present this aspect of the problem as it appears to the author at present but more evidence is desired for or against such an hypothesis in order to consolidate the ground before proceeding further with the investigation along this line of thought. The collaboration of readers both in this country and abroad would therefore be of great value. It is important to know the full distribution of the disease and the local circumstances relative to game preservation, as above defined, under which it occurs. It would be of especial value to know if there are areas where carrion-feeding and predatory animals and grass disease abound together. If cases do occur in areas where predators are reputed to be numerous an attempt should be made to find out if these suffer from a local destruction within these areas.

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CLINICAL COMMUNICATION

An Outbreak of Aujeszky's Disease Amongst Pigs

H. G. LAMONT and P. L. SHANKS

The following article describes an outbreak of Aujeszky's disease, in two litters of pigs, in which the mortality was 100 per cent.

General History.—The two cross-bred sows whose litters were affected were litter sisters and had had two litters each which were successfully reared. Both had 16 piglets in their third litters, but five of these died shortly after birth, two from one litter and three from the other. The litter numbers were reduced still further by the owner giving away one pig from one litter and two pigs from the second, so that the sows were rearing thirteen and eleven piglets respectively. The sows farrowed within 24 hours of each other and when four weeks old the piglets were thriving and in very good condition. The first symptoms appeared when the litter of thirteen was four weeks and four days old. During the week that followed the whole litter died. Deaths then commenced in the second litter and the whole of that litter succumbed during the ensuing six days. The management of sows and litters on the farm is good. The sows and litters have separate houses and in this particular instance these were in diagonally opposite corners of the farm buildings. At three weeks old the pigs were allowed a free run in a grass field with the other pigs on the farm. When illness appeared in the first litter no change in management was adopted. The affected pigs were dosed with various drugs, none of which had any beneficial effect. As soon as the same symptoms appeared in the second litter the pigs were immediately weaned and given buttermilk or sweet milk with some meal added. Various drugs again were used by the farmer, but without result. At the time of the outbreak there was another litter of ten pigs about eight weeks old on the farm. These have never shown any signs of illness although during the day they ran about with the two affected litters. The owner has been pig farming in a small way for many years and he states that this is the first time that he has had any serious illness among his pigs.

On enquiry it was learnt that no sudden deaths had occurred among any of the other animals on the farm; however a cat suffering

Tutt, J. F. D. (1937.) *Vet. Rec.* **49.** 726.
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from intense itching of the mouth had been drowned for humanitarian reasons. The history of this animal is discussed later. The feeding ration for the pigs was a proprietary one to which some bran was added. The bedding for the pens was a mixture of barley and oat straw. Rats were present on the farm but the owner stated that they were not numerous. Two rats were caught and used for experimental purposes.

Symptoms.—The symptoms were similar in every case and the duration of the illness was about eight hours, except in the case of three piglets which lived for almost 48 hours after showing the first symptoms. The first symptom was dullness and the piglets stopped suckling. Muscular tremors like shivering were then noticed and the animal walked aimlessly round the pen. Within a few hours of the muscular tremors appearing, fits developed and the piglet would lie down. These fits became progressively more frequent till the piglet became comatose and died. The fits were quite striking; the attack would come on suddenly and the piglet would roll its eyes, "screw up" its face and close its eyes tightly, the legs would be extended and the back hollowed. This sudden spasm would disappear as quickly as it had come and the animal would lie relaxed and exhausted. Any attempt to move or get up would bring on another spasm. The temperatures of the pigs at this stage were about 105° F. Blindness appeared to be present in some cases and in one case the piglet rubbed its snout up and down the wall till the flesh was raw and bleeding. In another case the farmer reported that a piglet appeared to try to rub the sides of its mouth with its fore legs. In other cases there was frothing at the mouth and a number of the piglets vomited. There was some champing of the jaws in almost every case. The symptoms were not so severe in the three piglets which showed illness for nearly 48 hours.

Post-mortem Findings. — *Post-mortem* examination was carried out on six piglets. All the organs in the body were normal macroscopically. The stomachs contained a variable quantity of thick mucus, slightly bile stained. In two cases there was obvious congestion of the blood vessels in the brain but in the others it was only slight.

Bacteriological Findings.—Attempts to cultivate bacteria from the liver, spleen, brain and heart blood on trypsin agar and blood agar yielded negative results under both aerobic and anaerobic conditions.

Diagnosis.—The presence of a neurotropic virus was suspected and suspensions of brain substance from dead piglets were inoculated subcutaneously into rabbits. The first rabbit inoculated died in three days and showed evidence of Aujeszky's disease. Two successful serial passages were made in rabbits from the brain of the first rabbit. The injection of heart blood from one of the dead rabbits also produced the disease in another rabbit.

Experimental.—Suspensions of brain material from three affected piglets when injected subcutaneously into fresh piglets failed to produce any evidence of disease.

Suspensions of brain substance from artificially affected rabbits caused death in three piglets when injected intracerebrally. Death occurred in three days without typical symptoms having been observed except in one case when the piglet appeared to have a fit immediately before death. Blood from one of these experimentally infected piglets and the brain of the two others produced typical symptoms of the disease in rabbits.

A suspension of brain material from an experimentally infected rabbit caused no symptoms of disease when injected intravenously into a piglet.

Incidental.—The carcase of a cat from the infected farm was obtained within 24 hours of the animal having been drowned. This cat had shown symptoms of intense itching around the mouth and the owner destroyed it for humanitarian reasons. A suspension of the brain of this cat was injected into a rabbit and death ensued from Aujeszky's disease in four days. The owner later informed us that he had seen the cat fighting with a rat a week before symptoms appeared in the cat. On *post-mortem* examination the cat showed two cuts under the lower jaw which had not healed.

Summary.—An outbreak of Aujeszky's disease in piglings is described.

Virus was recovered from the brains of the affected piglets, which had died, by the subcutaneous inoculation of rabbits. Subinoculations made by the intracerebral route into piglets with suspensions from the brains of these rabbits gave positive results, death occurring in three days.

Virus was recovered also from the brain of a cat on the same farm. This cat had been destroyed after showing symptoms of intense pruritus round the mouth.

A *Times* correspondent reports that the Government have issued instructions for the slaughter of all the animal population of the Buffalo National Park at Wainwright, Alberta, numbering at present 3,000 bison, 1,500 elks, 500 deer, 150 moose, and 35 yaks. The park, which has an area of 100,000 acres, will be closed. It is surmised that it may be used in connection with the Empire air training scheme.

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International List of Animal Diseases

THE need for uniformity in scientific terminology is generally accepted. The completion of an International List of Animal Diseases is a task which could be accomplished successfully only by specialist committees appointed to deal with the different sections. The distribution at the 13th International Veterinary Congress in 1938 of a draft list prepared by a committee of four members of the staff of the Veterinary Faculty at Onderstepoort, South Africa, has not received the attention which it deserved. The preparation of the list must have involved the expenditure of an enormous amount of time and energy and it will form a useful basis on which a more complete and revised list can be built.

It is essential that any international list should be of service to workers throughout the world and not, as is the case with the Onderstepoort draft, prepared for the use only of English speaking veterinarians. It is clear that Latin is the most suitable language for the fundamental terminology and, whenever possible, the nomenclature used should give some indication of the aetiology of the disease.

The Onderstepoort list lacks uniformity and needs extensive revision: for instance, infections caused by *Clostridium chauvoei* are grouped together under the heading "Gangraena" which is clearly unsuitable. On the other hand, "Pfeifferellosis" is used for diseases caused by *Pfeifferella mallei* and *whitmori* and is a suitable term which indicates the aetiology of the diseases grouped under it. Why not, therefore, "Clostridiosis" for the various clostridial infections? Sheep scab is omitted from the group of diseases under the heading "Mange" and is in a separate section labelled "Scab"! Numerous examples of a similar nature could be quoted.

The suggestions made by Dr. Chládek in his article appearing in this issue might well be adopted when the list is revised, more especially his primary classification which seems to us to be an excellent one from which no pathological condition of importance need be omitted and which has the advantage of including surgical operations and thus giving to the list a wider range of utility than it would otherwise possess. It is hoped that with the increase in our knowledge many of the diseases which would now fall into the section denoted by Dr. Chládek as "Casus indefiniti" would in later editions be assigned to a group higher in the list.

A list published last year in this journal (September 3rd, 1938, No. 36, pp. 1131-1138) by Dr. J. N. Oldham should be of considerable help to the compilers as it gives a comprehensive record of the nomenclature of the parasites of domestic animals. The nomenclature of poultry diseases is to be dealt with by the Special Committee on Poultry Diseases elected annually by the American Veterinary Medical Association and their recommendations will be made known at the next annual meeting of that association.

Now that Professor du Toit and his colleagues have broken the ground it is to be hoped that others will contribute to this important problem so that there will eventually be available in libraries throughout the world a comprehensive international list which will prove invaluable to all veterinarians whether engaged in reading an article in a foreign language, in writing a paper, in preparing an abstract or review, or in giving a name to a new disease.

THE CHEMICAL SOCIETY: ADVISORY RESEARCH COUNCIL FORMED

The Chemical Society have formed an Advisory Research Council, the main function of which will be, when approached, to bring to the notice of fellows and others engaged in chemical research subjects for investigation likely to be of potential value to the nation at the present time.

The field to be covered will embrace every branch of pure chemistry, including biochemistry and metallurgy. Chemists and various organisations (industrial and otherwise) will be invited to send in suggestions for research, and a list of topics for research considered to be of national importance will be drawn up and will normally be available to those wishing to make use of it for the purpose of initiating an investigation. The Council, however, may be the repository of confidential information; this may often suggest desirable broad lines of research without the necessity of disclosure of precedents. The chairman of the Council is Sir Robert Robinson, D.Sc., F.R.S. Enquiries and suggestions may be sent to the General Secretary, The Chemical Society, Burlington House, Piccadilly, London, W.1.

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When Alfred Marston, of Weston-on-Trent, was fined 20s. and £1 16s. costs at Stafford for causing 40 cows to be driven on the main road without a white light showing in front and behind, a warning was given that penalties up to a fine of £100 or three months' imprisonment could be imposed.

ABSTRACTS

[The Aetiology, Treatment and Prophylaxis of Periodic Ophthalmia. (Trans. title.) MINTSCHEW, P. (1938.) *Tierärztl. Rdsch.* **44.** 46. 748-753 and **47.** 761-769.]

The author considers the disease from the point of view of histamine intoxication and compares its aetiology with that of laminitis. This comparison is based on the work of Akerblom who suggested that the principal cause of the latter condition was auto-intoxication by histamine derived from the food protein following bacterial decarboxylation of the amino-acid histidine (1934, *Skand. Arch. Physiol.* **68**).

Although it is rare to find acute periodic ophthalmia concurrent with acute laminitis it is not uncommon to discover slight symptoms of laminitis at the commencement of a case of periodic ophthalmia, and similarly the onset of laminitis is frequently accompanied by myosis. By this theory the eye and the hoof are regarded as sites of predilection for local manifestations of a general intoxication.

The intoxication is regarded as the result of an accumulation of histamine-forming bacteria (strains of *Bact. coli*) in the alimentary canal, this state being encouraged by sudden changes of diet and an increased alkalinity of the intestinal contents. Experimental work performed lends some support to this view, *e.g.*, recovery of histamine from the blood of affected horses and the production of iridocyclitis by the injection of histamine.

Treatment consists of 24 hours' starvation, the withdrawal of about two litres of blood by jugular phlebotomy, the hypodermic injection 0·03 to 0·12 g. of pilocarpine and the giving of 300 g. sodium sulphate with the possible addition of 15 g. benzonaphthol by mouth. To change the reaction of the intestinal contents one spoonful of lactic acid or phosphoric acid is given in the drinking water night and morning for the first four or five days. In serious cases 1 g. of methylene blue in 200 to 300 c.c. water may be given intravenously, and later 10 g. calcium chloride in 400 to 500 c.c. water intravenously. Myosis and synechia may be treated by the sub-conjunctival injection of 1 c.c. of a 1 per cent. solution of atropine.

Prophylaxis consists of attention to the diet and if an attack is suspected, starving for 24 hours and administration of lactic or phosphoric acid for four or five days.

W. M. H.

[A Study of the Virus of Equine Infectious Anaemia. (Trans. title.) NAKAMURA, N., ISHII, S., and WATANABE, S. (1938.) *J. Jap. Soc. Vet. Sci.* **17.** 50-63. (In French.)]

An attempt to study the distribution of the virus of equine infectious anaemia in the various organs of recovered animals was made by inoculating ponies from an island where the disease has never existed, and after two months' freedom from clinical symptoms of infection, slaughtering them and testing the virus content of the organs by subinoculation.

In nearly all cases the highest concentration of virus appeared to be in the bone marrow, in that suspensions of this material caused a severe reaction after a relatively short incubation period.

In one case two months after the cessation of clinical symptoms virus was also demonstrated to exist in the blood, spleen, brain, and suprarenal gland. In another case whilst the brain and blood-producing organs were infective, liver suspension proved non-infective. In another case suspensions of the brain, suprarenal capsule and bone marrow caused acute fatal disease, whilst those of the other organs caused only a mild reaction after a long incubation period. In another case the blood, spleen and marrow proved infective whilst suspensions of the brain, liver and suprarenal capsule were not.

The authors conclude that the virus has an affinity for undifferentiated mesenchyme-reticulo-endothelial tissue. The virus may occur in the blood which however only acts passively in transporting it to other organs such as the liver, spleen, brain and endocrine glands. It is however gradually destroyed in these organs and disappears from the blood. Whilst in the early stages of the disease it is easily detectable in the liver and spleen, in the later stages it may only persist in the nervous system and endocrine glands.

An account of the histopathology encountered in the various organs under investigation is also included.

U. F. R.

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[Narcosis and Anaesthesia in Swine produced by Pentobarbital Sodium. KERNKAMP, H. C. H. (1939.) *J. Amer. Vet. Med. Ass.* **94.** 207-8.]

The author records his experiences of the use of pentobarbital sodium (nembutal) as an anaesthetic for swine. Fifty-three animals were given the drug, in most cases for some surgical interference. Twenty-two pigs were given nembutal intraperitoneally, 28 *via* the auricular vein and the remainder by means of the stomach tube.

The effects or results are brought under four headings according to the degree of insensibility —anaesthesia, narcosis, hypnosis and coma.

Of the 22 intraperitoneal injections anaesthesia was attained in 13 cases. The dosage varied from 0·167 to 0·391 grain per lb. body weight with an average of 0·206 grain per lb. The average time before the onset of anaesthesia was 25 minutes and 60 minutes elapsed before obvious lightening of anaesthesia. In this group one pig weighing 48 lb. and receiving 0·182 grain per lb. died 15 minutes after the stage of anaesthesia had been reached. In four cases a stage of narcosis only was reached although in two of them the dosage was 0·2 grain per lb. Hypnosis was the result in four pigs but the dose was small, varying from 0·083 to 0·121 grain per lb. The last of this series, a pig weighing 32 lb. receiving 0·15 grain per lb. became comatose only.

In the intravenous series anaesthesia was obtained in 19, narcosis in eight and hypnosis in one. The average dose to produce anaesthesia was 0·143 grain per lb. Dosage of 0·053 grain per lb. produced deep anaesthesia in a 285 lb. sow. Given intravenously the effect of the nembutal was rapid and the time to recover averaged 60 to 90 minutes. One pig given 0·2 grain per lb. died five minutes after injection. This was thought possibly to be due to too rapid injection. Slow injection is recommended.

Of the three cases where nembutal was given *via* the stomach tube, one pig weighing 25½ lb. dosed at the rate of 0·254 grain per lb. after a 24-hour fast remained in a state of narcosis for six hours, whilst the other two had to be given inhalation anaesthesia before surgical interference could be undertaken.

The author regards nembutal as a very satisfactory anaesthetic in swine. The intravenous route of administration is preferred to all others.

[These findings are in the main in agreement with those published by Wright (*J. comp. Path.* **52**. March, 1939). The latter author stresses the necessity of slow intravenous injection, also the importance of assessing the degree of narcosis present as the injection proceeds rather than the administration of a computed dose. He (Wright) also points out that the depth of narcosis must vary according to the surgery performed and mentions that whilst respiratory failure is prone to occur under deep nembutal anaesthesia it can be readily combated by artificial respiration.]

C. F.

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[The Physiological Background of Transfusion Therapy. Amada, R. S. (1939.) *J. Amer. Vet. Med. Ass.* **94**. 1. 18-27.]

The transfusion of blood supplies the patient with living cells and its beneficial effects may extend over a period of several weeks, whereas the results of the injection of saline solution are only very temporary.

The most obvious indications for transfusion are severe haemorrhage and surgical shock, but it is also of value in the treatment of sweet clover poisoning in cattle and to assist patients of all species recovering from debilitating diseases. It has been applied in purpura in horses with encouraging results, injecting 300 to 500 c.c. on several occasions.

In horses and pedigree dogs, it is desirable, before commencing therapy, to ascertain the compatibility of donor's and recipient's bloods. A simple and rapid agglutination test may be carried out on a glass slide. Mongrel dogs and the ox appear to be free from incompatibilities.

The difficulty of restraint renders it impracticable to carry out direct transfusion from one animal to another, but a semi-direct technique may be applied in the horse, using a triple nozzle syringe. A rubber tube about 3 feet long is fitted with a stout needle and carries the blood from the donor to the syringe, while a similar tube runs from the syringe to the recipient. The third by-pass of the syringe may be used for saline solution.

The simplest method of transfusion is to use citrated blood. The blood is collected in a wide-mouth sterile bottle containing a 3 per cent. aqueous solution of sodium citrate equivalent to one-tenth of its capacity. The bottle is fitted with a cork containing a long and short metal tube enabling the blood to be administered by gravity or, if preferred, a rubber bellows may be attached and pressure applied. In horses and cattle the usual quantity injected is from 500 to 1,000 c.c.

J. W. H. H.

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[New Light on Old Beliefs. Editorial. *Amer. J. Publ. Hlth.* **28**. 1118-1119. (2 refs.).]

The original conceptions of Nocard and Bang that in the great majority of cases the danger of tuberculous infection from meat is confined entirely to the tuberculous lesions, and that the blood and juice of the muscles only very exceptionally carries tubercle bacilli must be revised in the light of recent work by Nieberle. This worker has made a special study of cattle tuberculosis in which there is fresh, dry, infiltrating caseation. In these cases large areas of caseation are surrounded by hyperaemia and widely extending infiltration. Tubercle bacilli mass in large numbers at the periphery and readily enter the damaged vessels, setting up a tuberculous bacillaemia. Such changes can be observed in the udder and lymph nodes, and in 13 cases tubercle bacilli have been found in the meat. Similar changes occur in rapidly caseating lobular pneumonia of cattle, and in 18 of 21 such cases the meat showed tubercle bacilli. Similar results have been obtained in

caseating tuberculosis of the adrenals, kidneys, uterus, ovaries, and serous membranes. Nieberle emphasises that in meat inspection the character of the tuberculous lesions should be more carefully studied, and considers that the distribution is of secondary importance. A small area of dry caseation with marginal hyperaemia is of greater moment than widely distributed lesions of a productive nature. He considers that the conception of tuberculosis of lymph nodes indicating tuberculosis of muscles and bone marrow is incorrect, and that the latter indicates a bacillaemia. It is doubted, however, even in the light of these findings, whether the danger to human health is very great, since careful cooking has great protective value.

D. D. O.

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[I.—Some Experiments with Wild Rats and "Ratin" and "Ratinin" from 1907 to 1938. (Trans. title.) Bahr, L. (1939.) *Ztschr. InfektKr. Haust.* **54.** 44-56; **II.—Some Special Experiments with Wild Rats and "Ratin" and "Ratinin" of Dr. Bahr, of Copenhagen.** (Trans title.) Baars, G. (1939.) *Ibid.* **54.** 255-256.]

Dr. Bahr, of Copenhagen, has worked over a period of 31 years with strains of *S. enteritidis* var. *danysz* and claims that the virulence of his cultures have not been reduced materially for rats during that time. He records the use of over 18,000 rats and a mortality of about 60 per cent. after infection by feeding with broth cultures. With another strain he claims an average mortality of about 90 per cent. When he uses a preparation of squills as a supplementary feed then he claims a mortality of over 96 per cent. The culture is his "Ratin" preparation and the squills his "Ratinin." These are for use in the destruction of rodents and he gives, as an appendix, details issued in Denmark for fighting such pests and adds data showing the danger of rats in the spread of Weil's disease (leptospiral jaundice). Bahr also refers to the work of Baars (see below) who failed to confirm the high mortality in rats using variants of *S. enteritidis* and suggests that his rats were immunised. He also apparently doubts whether the right variant of *S. enteritidis* was being used.

Baars records work using several variants of *S. enteritidis*, one of which was apparently a "Ratin" strain. He could not confirm the high mortality claimed in the work of Bahr although he used a smaller number of animals. Furthermore, he is obviously not in favour of spreading cultures of salmonella about for the purpose of rodent destruction because of the danger to human food and animal standings.

R. L.

[Tick Paralysis due to the Bite of the American Dog Tick. Robinow, M., Carroll, T. B. (1938.) *J. Amer. Med. Ass.* **3.** 12.]

A case of tick paralysis believed to be caused by the American dog tick, *Dermacentor variabilis*, is reported for the first time. The patient, a girl aged nine years, complained of weakness on a number of occasions before paralytic symptoms became obvious. When admitted to hospital she was acutely ill with a temperature of 100·6° F., flaccid paralysis of the legs, and marked asynergia of the arms. Speech was difficult and the eyes showed marked lateral and vertical nystagmus. Poliomyelitis or poliencephalitis was suspected, but diagnostic spinal puncture was negative. Upon further examination two ticks were removed from the scalp in the parietal region. One of them was greatly engorged, and a diagnosis of tick paralysis was thus established. The ticks were identified as *Dermacentor variabilis*. The patient showed rapid improvement, and was discharged cured in five days.

The tick is common in eastern United States, and is considered worthy of consideration as a potential cause of paralysis in children as well as in dogs.

D. D. O.

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[Glaucoma in the Dog. Uberreiter, O. (1939.) *Arch. Tierheilk.* **74.** 235-272. (20 figs., numerous refs.).]

By the term glaucoma is understood an affection of the eye the principal symptom of which is a rise in the intraocular pressure, primary when there is no visible cause and secondary when the rise in tension can be ascribed to some detectable derangement.

The author has investigated 76 cases of glaucoma in the dog and asserts that primary glaucoma does occur since the symptoms and appearance in no way differ from those exhibited in humans. Histological examination supports his clinical findings in that of 20 eyes so examined twelve showed definite cupping of the optic disc.

Forty eyes have been operated upon for the relief of primary and secondary glaucoma and of the operative measures used in human ophthalmology the author prefers that of cyclodialysis devised by Heine. Palliative measures such as the use of miotics give only temporary relief.

The operation in its simplest form consists of making a 4 mm. incision through the bulbar conjunctiva and sclera about 6 to 8 mm. from the limbus. A spatula is then introduced between ciliary body and sclera and passes forward to enter the anterior chamber just in front of the root of the iris. This separation of the iris and ciliary body from the sclera occupies about one-fifth of the circumference of the iris.

The object of the operation is to produce new channels for drainage of aqueous by connecting the anterior chamber with the suprachoroidal space.

It is pointed out that in many cases of secondary glaucoma where the cause is occlusion of the pupillary opening by a synechia or where luxation of the lens in the anterior chamber is interfering with ocular drainage, operative interference is probably useless.

C. F.

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[Cultivation of the Virus of Aujeszky's Disease on the Chorio-allantoic Membrane of the Developing Egg. Glover, R. E. (1939.) *Brit. J. expt. Path.* **20.** 150.]

With a view to obtaining a method of active immunisation against Aujeszky's disease, the virus was propagated on the developing chorio-allantoic membrane in the hope that by this means a strain of modified virulence might be secured. Fifty-five passages were made in this way but the virus still retained its lethal properties for laboratory animals. A modification did occur, however, in that the period of incubation was lengthened, local pruritus was no longer produced, and the characteristic pulmonary lesions were much reduced in intensity.

H. H. S.

SWINE FEVER ON THE WANE

"Latest figures obtained from the Ministry of Agriculture suggest that this year's epidemic of swine fever, which reached considerable proportions in October, is now on the wane," states the *Farmers' Weekly* of November 24th. "In the first fortnight of this month 225 outbreaks were confirmed, compared with a total of 632 in October. Although there have been isolated outbreaks all over the country, especially in the west, the disease has been mainly confined to the eastern counties. Serious losses have been reported in Suffolk, and in some districts farmers have sold their entire herds rather than run the risk of infecting the farms. Prompt action in controlling movements of pigs in this area has been successful and during the five days ending November 19th only four cases were reported in East Suffolk, compared with 63 in the previous fortnight. The area at present controlled includes Norfolk, Suffolk, the greater part of Essex, the Isle of Ely, and parts of Holland (Lincolnshire) and Huntingdonshire."

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The first case to be brought in North Lincolnshire under the regulation which requires that horses must not be on the highway in the hours of darkness without a light being carried in front of them was dismissed on payment of costs at Market Rasen Police Court recently.

REPORT

[Milk and Nutrition. (1939). Part IV. Price 2s. Published by the National Institute for Research in Dairying, Shinfield, Reading.]

This is the fourth and last report of the Milk Nutrition Committee which has been engaged in a survey of the nutritive value of milk. The first report dealt with the effects of pasteurisation on the nutritive value of milk for laboratory animals; the second with the effects of dietary supplements of pasteurised and raw milk on growth and health of school children. The third is probably of greatest interest to our readers as it dealt with the effect of commercial pasteurisation on the nutritive value of milk as determined by experiments on calves. The present report contains the final report on the effects on school children, and a summary of all the work carried out together with the conclusions of the committee. We propose to deal in some detail with the final conclusions, so that our readers may be presented with a view of the findings reached by the committee. Those who wish to study the data and results in detail, are advised to purchase Parts III and IV.

Nutritive Value of Milk for Children.

The results of the tests carried out abundantly confirm the great value of cow's milk for promoting growth and aiding in the maintenance of health of school children. The experiments, which amounted to a test of the Milk-for-School-Children Scheme, showed that definite improvements in physique, general appearance and scholastic ability, and less marked improvements in muscular strength, resulted from the consumption of one-third of a pint, or better still two-thirds of a pint of either raw or pasteurised milk.

The Nutritive Value of Pasteurised and Raw Milk.

It is pointed out that it is necessary to emphasise that raw cow's milk is the natural food of the young calf during early life before it is able to subsist on other foods. Cow's milk is not, however, an ideal food for human infants before weaning; human milk is, of course, best. The differences between human and cow's milk are pointed out—human milk contains less protein, less calcium and phosphorus and less of most of the other minerals, but more sugar and more iron. A table of comparison is given. These differences must be remembered when calf experiments are considered in relation to human nutrition. Rapidly growing animals, like calves, are particularly sensitive to food deficiencies, and consequently the calf is the

best test animal for detecting small nutritional differences in cow's milk.

During a six months' feeding trial, no statistically significant differences in growth rate, general health, or composition of the blood could be detected between groups of calves fed on raw and pasteurised milk. In relation to raw milk, small defects in pasteurised milk do exist; it may be argued that their effects were masked by the feeding of other foods—hay and concentrates. The report points out that it is not such small defects as these which are of practical importance, but only those which would be demonstrable under such practical conditions as those in which the test was carried out. It is further pointed out that, since 1926, six other experiments with a similar object have been carried out in Britain, and the general summary and conclusions from an examination of all the data are as follows.—

> "Raw milk has for calves a nutritive value almost identical with that of pasteurised milk. If there is any difference in favour of raw milk it is so small that it is readily masked by quite small variations in the experimental conditions."

It is true that pasteurisation causes changes such as lessening the amounts of soluble calcium, phosphorus and iodine (especially the latter), and in the physico-chemical nature of proteins and in the reaction of the milk, but the results obtained in rats and calves show that these are only of academic importance. Further, these minor changes and possibly others are so slight that the physiological adaptability of the calf's stomach is able to cope with them without suffering. For example, the HCl in the gastric juice would be quite capable of bringing into soluble form all the calcium and phosphorus rendered insoluble by pasteurisation. It is possible that an ailing calf, however, fed on pasteurised milk might suffer from some disability which might not occur on raw milk. Such results would, however, be extremely difficult to demonstrate experimentally.

In view of the above, it is not surprising that the addition of two-thirds of a pint to the school children's diet, whether of raw or pasteurised milk, did not reveal any nutritive differences. The milk supplements formed only part of the children's dietary intakes, and any slight defects in the pasteurised milk would be readily overcome and would not influence growth and health. The results showed actually no differences of practical importance, and it may be concluded that there are no nutritive differences between raw and pasteurised milk for school children receiving these as part of an ordinary diet.

For milk-fed infants, however, cow's milk contains too little iron for proper nutrition and has to be supplemented. Egg yolk is a suitable form in which to give iron, and it also contains vitamin A (and the pro-vitamin carotene), B_1, the B_2 complex and D, as well as other nutrients, so that egg yolk would readily supplement any deficiency in pasteurised milk. Further, though commercial pasteurisation does reduce the vitamin-C content, it is usual to add some fruit or vegetable (swede) juice to the milk of infants, which will more than compensate the loss of C. It should be mentioned that in any case even raw milk is not a rich source of vitamin C.

It would consequently be unwise not to supplement either raw or pasteurised cow's milk fed to infants with these (or other) substances, and such additions will more than compensate for any loss sustained by the milk during pasteurisation.

It is pointed out that vitamin C loss is not due solely to heat treatment, but to previous exposure to light, the shorter rays of which cause some of the ascorbic acid present in the milk to become oxidised to dehydro-ascorbic acid, and it is this oxidation product which is destroyed by heat. Ascorbic acid, present unchanged in the milk, is not affected. Minute traces of copper may also cause oxidation of the vitamin C. Consequently, if pasteurisation were carried out in copper-free vessels, and were not exposed to light, no loss of vitamin C would occur.

So far as the rat is concerned, cow's milk is equally as unsuitable as for human infants but for a different reason. Whereas it is too rich in proteins and minerals for infants, it is not rich enough for the much more rapidly growing young rat. It is well known that the more rapid the natural growth increase in a species, the richer is the milk of that species. The rats used in these experiments, however, can be regarded as giving a microscopic picture of the details of what took place in the "gross" feeding experiments in children and calves. Any minute differences in nutritive values between raw and pasteurised milk might have been expected to be demonstrated by the rat investigations. That there were revealed no significant differences of any importance between the various groups fed on raw and pasteurised milk appears to afford conclusive proof that no such significant differences exist.

The only changes of note which can be definitely ascribed to the effects of commercial pasteurisation of milk and which may play a very minor part in practical nutrition, are a lowering by 20 per cent. of the vitamin-C content, and a slight decrease in the heat labile fraction of vitamin B (? part of the B fraction).

The report contains some 30 or more pages of tables and charts, etc., which will be found useful by those interested in details.

N.V.M.A. DIVISIONAL REPORT

Yorkshire Veterinary Medical Society*

MEETING AT LEEDS

A general meeting of the Society was held in the Hotel Metropole, Leeds, on the afternoon of Friday, October 27th, 1939.

The President, Mr. W. R. McKinna, M.R.C.V.S., D.V.S.M., occupied the Chair and the following members were present: Lieut.-Col. J. A. Dixon, Miss C. A. Woods, Messrs. F. C. Scott, A. H. Watson, J. W. Procter, W. A. Campbell, T. C. Hall, J. O. Powley, G. W. Davidson and C. Harvey. Mr. James Marshall was present as a visitor.

Apologies for absence were received from the following: Major D. S. Rabagliati, Messrs. S. E. Sampson and W. T. MacGregor.

The minutes of the last meeting, held at the Oil Refinery of the British Cod Liver Oil Producers (Hull), Ltd., on Wednesday, May 24th, 1939, were taken as read, having been published in the *Veterinary Record*.

Obituary.—The President next rose and recalled to the minds of members the death of Sir Frederick Hobday. After calling on those present to stand in silence for a few minutes as a token of respect to Sir Frederick, the President said that it needed no words of his to remind them what a very great man Sir Frederick had been and how much he had done for the profession. Continuing, he said that the Society had not sent a wreath at the time of the funeral as a request had been made that no flowers be sent, but that money which would have been spent on flowers should be sent to the Students' Assistance Fund, Royal Veterinary College, instead. Mr. Watson then proposed that a donation of £2 2s. 0d. be sent. This proposal, seconded by Mr. Procter, was passed unanimously.

Correspondence.—The letter addressed to all Divisions by the General Secretary, N.V.M.A., which had reference to the sale of a certain drug (specified) direct to the farming community of Northern Ireland, was read. It was stated that the firm producing this agent (in England) had been approached by the N.V.M.A. and wished to co-operate in the stopping of this leakage. The Association asked the Division to help by bringing the matter to the notice of members and by asking them to buy their supplies direct.

The scheme for the protection of the practices of absentee general practitioners was brought to the notice of those present. The general feeling of the meeting was that the matter could rest at present as the profession was a reserved occupation and for the time being there was no member to whom the scheme would apply.

Some correspondence dealing with the rationing of petrol was dealt with. The Secretary said that he had undertaken to act as liaison officer for the profession in the North-Eastern Division. In future members would probably get more consideration if their requests were sent through the Secretary.

The President then stated that he had some correspondence with which he had dealt during the Secretary's absence, concerning a certain proposed clinic. As the clinic was at present in abeyance no further action need be taken.

Election of New Members.—The following new members, proposed at the last meeting, were formally elected to membership: Messrs. F. Bradley (Hessel), M. Dugdill (Hull), C. Harvey (Wakefield), and Major Bond (Malton).

Mr. J. Marshall (Dewsbury) was nominated for membership.

Finance.—The Treasurer's financial statement for the year 1938-39 and the balance sheet of the social evening of March 17th, 1939, were adopted.

Election of Officers

The following officials for the year 1939-40 were all unanimously elected:—

President.—J. W. Procter.

Vice-Presidents.—W. R. McKinna, E. Ackroyd, T. C. Hall.

Treasurer.—F. C. Scott.

Secretary.—A. J. Adams.

Auditors.—W. Crawford and A. H. Watson.

Council.—W. Campbell, J. A. Dixon, A. Riggs, J. M. McKellar, G. S. Donaldson, G. V. Tyerman, G. Whitehead and F. T. Stokes.

Trustees.—J. A. Dixon and J. Clarkson.

Installation of President, 1939-40. — Mr. McKinna said that the last duty for him to perform was the very pleasant one of inducting the newly elected President, Mr. J. W. Procter. After a few words on the course of his own reign of office he asked Mr. Procter to take the Chair, wishing him at the same time a very happy year in office.

On taking over the Chair, amid applause, Mr. Procter thanked the retiring President and all present for the honour they had bestowed upon him. He said that Mr. McKinna had not had an easy time as President: there had been the change of Secretary and also very great changes in the profession itself. He felt sure the meeting would accord him a very hearty vote of thanks for the able way he had carried out his duties as President.

*Received for publication November 13th, 1939.

Any Other Business.—Under this heading Mr. Procter brought up the subject of A.R.P. for animals, stressing the need for co-ordination of the work of the various centres which either already existed or were in contemplation.

A discussion ensued, in which Messrs. Watson, Campbell and McKinna principally participated.

Mr. Procter suggested that Colonel Stordy should be asked to undertake a tour of the West Riding as he had done in the Midlands, and in the meantime all members of the Society should be asked if they were willing to co-operate.

It was then decided that the Secretary should circularise all members and also all veterinary surgeons, members or not, in the West Riding.

Before the meeting rose Colonel Dixon proposed that the following resolution be sent to the N.V.M.A.:—

"That this meeting of the Yorkshire Veterinary Medical Society requests the Council of the National Veterinary Medical Association of Great Britain and Ireland to make such representations to the Ministry of Food and/or the Ministry of Health, as may be necessary to ensure that when, as is expected within a few weeks, the full control of livestock and meat is enforced and all slaughtering of animals for food in this country will be carried out on behalf of the Ministry of Food at authorised Government slaughterhouses, the inspection of the carcases and organs of all animals slaughtered under that authority shall be carried out by or under the supervision and administration of veterinary surgeons."

After some discussion it was agreed that if anything was to be done in the matter, now was the time to do it and the Secretary was instructed to forward the resolution to the Council of the National Veterinary Medical Association.

There being no other business the meeting was officially closed.

A. J. Adams, *Hon. Secretary.*

In Parliament

The following are among the questions and answers recorded in the House of Commons recently:—

Horses (Purchase)

Major Sir Jocelyn Lucas asked the Secretary of State for War whether, in view of the fact that the War Office is establishing a register of owners of horses who are desirous of selling to the Government at a reasonable figure, should they be required, he will now state to whom horse owners should write enclosing details; and whether, to save needless correspondence, he will make known the type or types of horses likely to be required?

Mr. Hore-Belisha: Information as to the types of horses which may be needed will shortly be published. Owners wishing to be registered should then write to the War Office.

Shire Horses (Government Grants)

Mr. Price asked the Minister of Agriculture whether he is aware that Shire horse societies in various parts of the country will not be able to continue their work and may have to go out of existence because of the withdrawal of Government grants; and whether he will reconsider the matter with a view to giving some assistance?

Sir R. Dorman-Smith: I have received representations in the sense indicated by the hon. Member, but I regret that, after the fullest consideration, I cannot see my way to withdraw the suspension of these grants.

Disposal of Rejected Bulls

Mr. Hopkin asked the Chancellor of the Duchy of Lancaster whether he is aware that in Carmarthenshire when bulls are rejected the owners are informed by the livestock officer that the bulls so rejected cannot be sold at a livestock market, and by the Fat Stock Order, September 23rd, 1939, No. 1130, paragraph 2, such bulls can be sold only through a livestock market; and what steps he proposes to take to enable the farmers of Carmarthenshire to dispose of these rejected bulls to the best national advantage?

Mr. W. S. Morrison: Assuming that by "rejected bulls" the hon. Member means bulls in respect of which notices under Section 6 of the Improvement of Livestock (Licensing of Bulls) Act, 1931, have been served, Sub-section (6) of that Section renders illegal the sale of such bulls, as livestock in a market. It is also true that the Fat Stock (Provisional Prices) (No. 2) Order, 1939, prohibits the sale of fat stock except in a market. The Act, however, does not affect bullocks, and the Order does not apply to carcases. The farmers of Carmarthenshire are therefore able to dispose of their rejected bulls either by sale in a market as bullocks or by sale after slaughter.

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Livestock Slaughtering

Mr. Jackson asked the Chancellor of the Duchy of Lancaster why, in view of the premature sale of store pigs, which are being killed for pork, and the wholesale slaughter of young cattle and milking cows, the Ministry have not taken full control over the slaughter and sale of this livestock; and, in view of the danger of reducing our breeding stock, when will full control of sales and prices be exercised?

Mr. W. S. Morrison: The plan for the full control of meat and livestock was originally linked with the rationing of meat. It has been decided that meat rationing is not at present necessary, and the plan of control is being revised accordingly. I hope to be in a position to make a further announcement on the matter at an early date.

Mr. H. Stewart asked the Chancellor of the Duchy of Lancaster whether he has any statement to make with regard to the use and maintenance of slaughterhouses under the proposed control scheme.

Mr. W. S. Morrison: The plan for the full control of meat and livestock provides for the use of a number of selected slaughterhouses under the direction of the Ministry, for the slaughter of livestock purchased by the Ministry. The exact number and location of these slaughterhouses are at present under review.

Swine Fever, Eastern Counties

Mr. Butcher asked the Minister of Agriculture whether he has any information to give about the outbreak of swine fever in the county of Holland, Lincs?

Sir R. Dorman-Smith: As a result of the large number of outbreaks of swine fever which have occurred during the last few months in the eastern counties, an Order prohibiting the holding of markets for store pigs and restricting the movement of pigs was applied on October 9th last to certain areas in those counties and on November 1st the operation of the Order was extended to embrace other areas, including part of the Holland Division of Lincolnshire. While it is too early to appraise the effect of the operation of this Order in the Holland Division I am glad to say that the swine fever position in the eastern counties has improved appreciably during the past month.

Notes and News

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

Dec. 4th.—Meeting of the Editorial Committee, N.V.M.A., at 36, Gordon Square, W.C.1, 4 p.m.

Dec. 4th.—R.C.V.S. Membership Examinations—Written.

Dec. 7th.—Meeting of Central Veterinary Society, at Royal Veterinary College, N.W.1, 2.30 p.m.

Dec. 8th.—R.C.V.S. Membership Examinations—Oral—begin.

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THE PROFESSION AND MILITARY SERVICE

Although the profession of veterinary surgery is scheduled as a reserved occupation, from information received by the Association it would appear that certain members for various reasons are desirous of joining one or other of His Majesty's Forces. The principal reason appears to be that owing to the war, veterinary practice in certain areas has been depleted to such an extent that continuance is either no longer an economic proposition, or that the practice will have to be carried on in the future with a reduced professional staff.

With a view to considering whether or not an approach should be made to the proper authorities to relax the ban against members of the veterinary profession joining any of His Majesty's Forces, those desirous of volunteering for service with the Forces are asked to send their names without delay to the General Secretary, N.V.M.A., 36, Gordon Square, London, W.C.1.

Diseases of Animals Acts—Foot-and-Mouth Disease (Sera and Glandular Products) Order of 1939

In our issue of July 1st (Vol. 51, No. 26, page 835) we published an extended note setting out the terms of the above Order.

The clause which particularly affects the veterinary surgeon is that which declares, "No person shall treat any cattle, sheep, goats, other ruminating animals or swine with any glandular extract or serum, unless the substance was sold or supplied to him in a vessel, container, or package bearing a label containing the following words, namely:—

> "The use of this preparation for veterinary purposes is authorised under the Foot-and-Mouth Disease (Sera and Glandular Products) Order of 1939."

Since the Order comes into operation on December 10th, 1939, this is an appropriate occasion on which to draw the attention of our readers to the effect which this Order will have on veterinary practice. After the commencement of its operation a veterinary surgeon intending to treat any ruminant or swine with a glandular extract or serum must make certain before he does so that the "vessel, container, or package" from which he extracts the material bears the appropriate label; otherwise he will be committing a breach of the provisions of the Order and rendering himself liable on summary conviction to the penalties provided by the Diseases of Animals Acts.

Since, in the case of certain biological products—notably lamb dysentery serum which is injected within a few hours of the birth of the lamb—the veterinary surgeon may wish to supply his client with the serum, a syringe and instructions he must, in future, be careful that the serum supplied bears the appropriate label; otherwise it might be held that he had aided and abetted an offence.

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SUPPLEMENTARY SUPPLIES OF PETROL FOR VETERINARY SURGEONS

We much regret that, through a printer's error, the following sentence concluding our note in last week's issue on supplementary supplies of petrol for veterinary surgeons, was quoted as part of the letter reproduced from one of the liaison officers: "These liaison officers are rendering invaluable service to members of the veterinary profession; they are devoting a very considerable amount of time to this work and it behoves every one of us to show our gratitude by making their task as light as possible." We hasten to remove the unfortunate misapprehension thus created and to stress the fact that this was an editorial expression of appreciation of the work of the liaison officers.

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Readers are also asked to note that in addition to a statement on horse-power, average normal mileage and supplementary rations already allowed, it is an advantage if the liaison

officer is advised of the amount of petrol required, over and above the needs of general practice, for the performance of duties for the Ministry of Agriculture (Panel A or B) or in connection with the licensing of stallions.

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Erratum.—November 25th, page 1397, column 2, line 13. For 32·7 please read 3·27.

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PERSONAL

Marriage. — Scorgie—Sack. — On November 25th, at St. Michael's Church, Highgate, London, Norman James Scorgie, M.A., B.Sc., M.R.C.V.S., The Royal Veterinary College, son of Mr. and Mrs. Alexander Scorgie, Oldmeldrum, Aberdeenshire, to Beryl Alice, daughter of Mr. T. J. Sack, A.M.I.E.E., and Mrs. Sack, of 90, Hillway, Highgate, N.6.

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GENERAL OBITUARY

Captain Reginald Frederick Tucker

It is with deep regret that we record that Captain Reginald Frederick Tucker, the only son of Mr. F. J. Tucker, retired veterinary surgeon of Monmow Street, Monmouth, is officially reported to have been killed in a motor lorry accident while serving with the Royal Engineers somewhere in France.

Captain Tucker, who was 35 years of age, was a native of Monmouth and was a well-known old boy of Monmouth School. In private life he held the important position of Assistant Locomotive Traffic Director of the London Midland and Scottish Railway Company. The heartfelt sympathy of members of the profession will be extended to the parents thus tragically bereaved.

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ARMY VETERINARY SERVICE

London Gazette—War Office—Regular Army

November 28th.—Lieut. D. MacK. Stewart to be Captain (Sept. 1st).

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LEGAL NOTES

Failure to Notify Foot-and-Mouth Disease.—The *Poole and East Dorset Herald* reports that the recent foot-and-mouth disease outbreak in East Dorset had a sequel at Wimborne Police Court recently when Messrs. W. L. Miller & Sons, Ltd., of Sterte, Poole, were summoned for failing to notify the authority of animals affected or suspected of being affected with foot-and-mouth disease.

Mr. R. E. Andrews prosecuted, and Mr. Gerald Howard appeared for defendants, who admitted the offence.

Mr. Andrews said the outbreak occurred at Rosedale Piggeries, Holt, owned by defendants. On October 16th, Mr. Thomas Barr, an inspector of the Ministry of Agriculture, visited the piggeries and observed about 100 pigs lame with foot-and-mouth disease and concluded that in about ten cases the disease was of at least seven days standing. Subsequent examinations were made by two other inspectors, Captain John Fox and Mr. Alexander, who formed the same conclusion and later 1,025 pigs were slaughtered. Of these 243 were affected with the disease. Mr. Andrews stressed the gravity of the offence particularly as it had occurred in an area already affected.

Captain John Fox stated that, on visiting the Rosedale Piggeries on October 16th, he saw eight pigs affected with the disease of seven to ten days standing. On walking through the piggeries, witness found others affected, and many of the smaller pigs had lost their hooves. All affected pigs were lame.

Witness asked John Miller, a director, why he had not informed the police or consulted a veterinary surgeon, and Miller told him that lameness had occurred before, and a veterinary surgeon had told him that it was due to parasitic infection of the hoof. He thought these pigs were lame from a similar cause. Witness said that the number of cases and the fact that the area was infected should have prompted him to find out the cause. Miller told him he thought there had been lameness for about a fortnight.

The number of lame pigs should have been a warning, proceeded Captain Fox. After slaughter, a further examination revealed that the age of the lesions was even greater than he had at first thought, probably 14 days. Notification should have been made when they were first noticed.

In reply to Mr. Howard, witness agreed that Miller had been quite open about the whole matter and the farm was well kept and modern. He did not think that pigs kept in the open, or near damp were liable to go lame. This would be more probable if they were kept on concrete. Miller had told him that he had had no experience of foot-and-mouth disease.

Mr. Frederick Beckett, veterinary surgeon, of Blandford, said there was a good deal of concrete flooring at the piggeries, and lameness frequently occurred among pigs kept on concrete. This would be aggravated by their lying in wet. He had been called in about three years previously to deal with lameness that had occurred through pigs being on concrete.

Witness considered that the disease among cattle was easier to diagnose, whereas in pigs it often assumed a very mild form and they did not go off their food.

Mr. Howard said it was a case that had caused great anxiety to the defendants. Formerly it had been necessary to prove in such cases that the people were aware of the disease. There had been no intention of defying the law. Mr. Miller had no experience of the disease, and in not reporting the lameness he had done a silly thing. He ought to have taken advice on seeing so much lameness. No attempt had been made to conceal or distort anything.

After a short retirement, the Bench imposed a fine of £100 with nine guineas costs. The chairman said they considered it a very serious case, especially as this was already an affected area.

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NATIONAL HORSE ASSOCIATION

At a recent meeting of the council of the National Horse Association the question of maintaining the Association's activities during the period of war was discussed. The Earl of Athlone consented to remain as President of the National Horse Association during such time, with Frances, Lady Daresbury as Vice-President, and an executive committee consisting of Lady Daresbury, Sir Walter Gilbey, Mr. Claud F. Goddard, Mr. Nigel C. Colman, M.P., Major H. Faudel Phillips and Brigadier W. H. Anderson was formed to conduct the business of the Association and report periodically to the existing members of the council.

The President stated that it was obvious that members desired that the News Sheet should be continued, and the council would endeavour to see that members were kept well advised of current activities through this medium. The issue of the Horse Owners' Reference Book would, however, be suspended, but certain items from this publication would be included in the News Sheet.

It was to be regretted that the extensive winter programme of meetings, lectures, and practical demonstrations of horsemanship had had to be cancelled, but as soon as it was possible, the Council would resume functions where members could again meet each other.

Recent demands for the two leaflets, "Hints on Driving," and "Hints on the Fitting of Harness" had practically exhausted the supply, and therefore these would be revised and reprinted. The council also asked owners of large studs to send them in suggestions, information and ideas on the care and feeding of horses during war-time, so that from the data received they might be able to issue a leaflet on the subject for the general information of members.

The council learnt with deep disappointment that the Minister of Agriculture had intimated that he could not see his way to withdraw the suspension of the grants for heavy horse breeding. A very serious position had thus been created at a time when the horse was proving so invaluable, not only to the farmer, but for transport purposes. It was resolved to obtain full information as to the position likely to be created by the withdrawal of heavy horse stallions throughout the country, and to submit it to the proper authorities.

The council learnt with pleasure of the withdrawal by the Minister of Transport of the ban on the use of horses in certain London streets, and also of the increasing use of horses for commercial and private transport.

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AGRICULTURAL RESEARCH SCHOLARSHIPS

Studentships for Research in Animal Health and Veterinary Scholarships

It is notified that, on the recommendation of the Agricultural Research Council, the following awards of Agricultural Research Scholarships, Studentships for Research in Animal Health and Veterinary Scholarships have been made by the Ministry of Agriculture and Fisheries and the Department of Agriculture for Scotland:—

M. R. F. Ashworth, B.A., B.Sc., of Oriel College, Oxford, and the Macaulay Institute for Soil Research—renewal of a one-year Research Scholarship in Soil Chemistry for a further two years, the first to be spent at the Macaulay Institute for Soil Research.

W. G. Burton, B.Sc., of Leeds University—a three-year Research Scholarship in Plant Physiology, the first year to be spent at Cambridge University.

J. Hammond, B.A., of Christ's College, Cambridge—a three-year Research Scholarship in Animal Physiology, the first year to be spent at the Animal Nutrition Research Institute, Cambridge University.

C. L. Hannay, B.Sc. (Agr.), of Toronto University and the Imperial College of Science and Technology—a three-year Research Scholarship in Agricultural Bacteriology, the first year to be spent in the Bacteriology Department of the Imperial College of Science and Technology.

J. Keppie, B.Sc. (Vet. Sc.), M.R.C.V.S., of Edinburgh University and the Royal (Dick) Veterinary College, Edinburgh—a Studentship for Research in Animal Health, for one year in the first instance, to be spent at the Institute of Animal Pathology, Cambridge University.

H. J. Steer, B.Sc., of the University College of Wales, Aberystwyth—a three-year Research Scholarship in Agricultural Economics, the first year to be spent at the Institute of Agricultural Economics, Oxford University.

J. E. Thompson, B.A., of Peterhouse, Cambridge—a four-year Veterinary Scholarship, the first year to be spent at the Royal (Dick) Veterinary College, Edinburgh.

A. G. Walker, B.Sc., of the University College of Wales, Aberystwyth, and Rothamsted Experimental Station—a one-year Research Scholarship in Plant Pathology at Rothamsted Experimental Station.

J. H. Wilkins, B.Sc. (Vet. Sc.), M.R.C.V.S., of Edinburgh University and the Royal (Dick) Veterinary College, Edinburgh—a Studentship for Research in Animal Health, for one year in the first instance, to be spent at the Institute of Animal Pathology, Cambridge University.

The object of these scholarships and studentships is to train research workers in agricultural science and the science of animal health and, in the case of veterinary scholarships, to enable graduates with honours in science to obtain a veterinary professional qualification with a view to undertaking research in animal health.

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GLASGOW COLLEGE PRIZE DISTRIBUTION

The Glasgow College prize distribution ceremony took place on November 14th, Mr. Alexander Murdoch, C.A., the chairman of the governors, presiding, and the Lord Provost (Mr. P. J. Dollan) officiating.

Mr. Murdoch, introducing the Lord Provost, said that in spite of the war the College now had 328 students, probably a record total, and applications from many more students, especially from London, had to be refused because of the lack of accommodation. In point of fact, they were cramped for space at the present time.

During the past year £1,500 had been spent in roofing the courtyard and other work, while £1,000 had also been expended in increasing the College equipment.

Mr. Murdoch closed by thanking Glasgow Corporation, other local authorities, organisations, and private individuals for the financial support they had given the College.

Rebuilding Scheme

The Lord Provost in a brief speech said that Glasgow Corporation, as the College's chief guarantors, were gratified at the increase in the number of students. He understood that there were certain schemes under consideration for the reconstruction of the College buildings, and he had to confess that the present buildings were unworthy of the city of Glasgow and were unsuitable in view of the important work being conducted at the College.

"It is to be hoped," Mr. Dollan added, "that during the present period the plans for reconstruction will be completed and approved by all interested bodies, so that when the war is over the work of building a new college can be got on with immediately."

Medal Winners

Certificates in various subjects were presented, and apart from these, medals were awarded to the following students:—

First Year.—R. M. Wilson (silver medal in chemistry and certificates in chemistry and biology, gaining also 1st honours in the professional examination); W. Stewart (silver medal in biology and certificates in chemistry and biology, gaining also 2nd honours in the professional examination).

Second Year.—Miller Watson (silver medal in physiology and certificate in physiology and histology); I. C. Bryson (silver medal in histology and certificates in physiology and histology); J. B. Bayliss (silver medal in junior anatomy and certificates in physiology and histology).

Animal Management.—Fergus A. Tufts (silver medal and certificate).

Third Year.—R. Auld (silver medal in anatomy and certificate in anatomy); J. C. Wilson (silver medal in pharmacology and certificate in pharmacology); W. W. Black (silver medal in hygiene and certificate in hygiene and anatomy).

Fourth Year.—Andrew Wilson (silver medals in pathology and parasitology and certificates in pathology and parasitology, gaining also 2nd honours in the professional examination).

Fifth Year.—J. L. Shaw (the gold medal presented by the Board of Governors to the student gaining the highest aggregate in all the professional examinations, and certificate in medicine); A. V. Farrel (silver medal in medicine and certificates in medicine and surgery); D. W. Donaldson (silver medal in surgery and certificates in medicine and surgery).

Mr. G. A. Mackenzie was awarded the special prize of two guineas given by Dr. Whitehouse for the best aggregate in anatomy.

Miss M. H. Weddell was awarded the special prize of two guineas given by Mrs. Marshall for the highest aggregate in all the professional examinations for female students.

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IS BOVINE TUBERCULOSIS INCREASING?

In an issue of the *British Medical Journal*, of recent date, the above question is discussed as follows:—

"Under war conditions the quality, as well as the quantity, of home-produced food acquires enhanced importance. The production of milk, for instance, is likely to be increased in spite of the ploughing of some pasture land, and it is imperative that it should not prove the medium for carrying infection to children whose resistance may be reduced by deprivation in other directions as the result of prolonged hostilities. The failure of the Government's attempt to secure the passage of the Milk Bill last year is therefore to be deplored. There is now, of course, no early prospect of enlightened legislation of this kind. It may be remembered that the beginning of the modern grading system dates from the last war, when tuberculin testing was officially recognised by the Ministry of Food and higher prices were allowed for milk from tubercle-free herds. If this gives a glimmer of hope it is damped by the realisation that pasteurisation—the only measure we now believe to offer sufficient security—would be much more difficult to extend during war. Since the evacuated have mostly been transferred from large towns, where much of the milk is pasteurised, to rural areas without accessible pasteurising plants, it is probable that even more children will have to consume raw milk than in the recent past. In these circumstances the records of areas where most of the milk is unpasteurised are of interest. Very full information in this connection is contained in the annual report for 1938 of Dr. J. Greenwood Wilson, Medical Officer of Health of the City of Cardiff. In this large town about 11,000 gallons of milk are consumed daily. Only 13·6 per cent. is sold as pasteurised, 4·1 per cent. tuberculin tested, and 1·2 per cent. accredited (in June, 1938), although about 42 per cent. of all the milk sold receives some form of heat treatment. Of 301 routine samples of milk, raw, non-graded, and unbulked, examined for tubercle bacilli, 20, or 6·6 per cent., were positive. This percentage has only once been equalled in magnitude since 1927. These findings may be compared with the results of meat inspection at Cardiff's large public abattoirs, of which full information has been given in the annual reports over a period of years. The sources of meat stock are, of course, not necessarily the same as those for milk, but the particulars given indicate a general trend in the health of bovine animals. In recent years 13,000 to 15,000 cattle have been slaughtered annually, of which about 1,000 have been cows. Up to 1931 the proportion of cows fund tuberculous ranged from 20 to 27 per cent. It then began to rise, and in each year since 1934 it has been over 40 per cent., reaching its maximum in 1936, when the percentage was 51·6. In 1938 it was 41·0. A similar increase, although naturally on a much smaller scale, can be observed in the proportion of heifers and steers showing manifestations of tuberculosis. The reason, therefore, does not seem to lie in any new practice of delaying the age of slaughter of cows, which, like bulls, are more likely to show signs of disease with advancing years. In the absence of any other explanation it is reasonable to suppose that these figures reflect a deterioration in the health of cattle, the evil effects of which on the milk supply may require more radical action than either the local authorities or the Ministry of Agriculture are able to take under the present law."

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SURVIVAL OF THE CAVALRY

"With mechanisation tending to corner the Army's publicity market, it may come as a surprise to learn that there are still 16 cavalry regiments—three of them Regulars and the rest Yeomanry," observes *The Times*. "The cavalry mounts, as well as the artillery horses, have their place in modern warfare. Certain kinds of reconnaissance, in hilly, wooded, or marshy country for instance, are best done on horseback. The day has gone when yeomen took their own horse to the war. Even so there are one or two. For the most part these are men with no previous acquaintance with a horse—men off the office stool, motor-works hands, miners, brewers' labourers. They must have had the urge in them, for they chose to be in the cavalry and are immensely keen on their job. They take to it quickly, many being no longer than six months in quarters. Occasionally the officers find a man who never will make much of a hand at it, and he goes on to the mechanical side. Obviously the appeal of the horse remains in these days of tanks and motorised units."

GAS INJURIES TO THE EYE

In a leading article on the above subject published in its issue of November 4th, the *British Medical Journal* observes:—

"Fifty-two years ago Leber[1] in a study on inflammation in the eye described the action on the cornea and conjunctiva of a highly irritating chemical compound just discovered by his colleague Viktor Meyer. To Leber, who noted fully the destructive action of this new compound, the point of interest was that it could produce pyogenic inflammation in the absence of micro-organisms, but he lived to see his new laboratory reagent used for less academic purposes. His conclusion that mustard gas could produce a pyogenic reaction was advanced only tentatively, for it was based on a single experiment on a rabbit, and his expressed wish for the experiment to be extended and amplified has since been carried out on a larger scale than he dreamt of and in the grimmest of laboratories. As a footnote to Leber's experiments it may be stated that the German High Command in 1915 fully confirmed his observations on the necrotising action of this compound, but disproved that it induces a pyogenic reaction in the absence of secondary infection. A conclusion of Viktor Meyer's was also disproved, for it was found that, contrary to his belief, the action of mustard gas was strictly local and not remote from absorption through the blood stream.

"The fundamental feature of ocular injuries produced by mustard gas is that the injury is directly proportional to the concentration that reaches the eye. During the last war, when vapour gas was used and the methods of distribution were not too effective, only about 10 per cent. of gassed men developed corneal lesions—mostly transient—and it is said that only about 15 men in all were blinded by gas. The methods of distributing gas that are available to-day are likely to cause more casualties (in the absence of protective measures, which have also grown in effectiveness). The latent period between exposure and the appearance of symptoms, which in the last war was generally six to twelve hours, is thus likely to approach the total absence of a latent period after a splash from liquid gas, and the severity of the reaction is likely to be such that many more cases of corneal involvement, with their much longer course and more serious prognosis, will be seen. In the improved protective measures rather than in improved methods of treatment lies the hope of counteracting these threatening possibilities, for treatment of a gas injury, whether brought about by vapour or by liquid, comes up against the fundamental difficulty that the effect of gas on a tissue is instantaneous, though there is some experimental evidence that the prophylactic use of chlorinating agents will render a gas injury to the eye less serious.[2]

"The potentialities of gas warfare have been increased not only by the perfection of the means of distributing more concentrated vapour but also by its possible use in air raids on the civil population. This possibility was usefully discussed in the Section of Ophthalmology at the Aberdeen Meeting of the British Medical Association this year. The discussion revealed that there were considerable gaps in our knowledge of the action of gas on the eye, and that the measures of defence left room for improvement. One of the openers, Colonel A. Irvine-Fortescue,[3] stressed the need for hospital facilities of the marquee type to accommodate a sudden large influx of persons temporarily blinded by gas. It is true that most such patients have no serious lesions, but the irritating symptoms and the anxiety state which develop make in-patient treatment necessary. Patients with no serious lesions, yet unable to open their eyes and afraid of blindness, may well be a source of panic when treated as out-patients. An auxiliary nursing personnel specially trained in eye irrigation and a sufficient supply of irrigators to allow of a considerable number of eye casualties being treated simultaneously are other measures necessary to supplement this improvised in-patient treatment. That such facilities are at present not widely available emphasises Colonel Irvine-Fortescue's plea for a special civilian ophthalmic corps working under the supervision of an ophthalmologist-in-chief. Besides unresolved administrative problems there were many others of a clinical character, as was brought out by Mr. Arnold Sorsby[4] at the same meeting. Mustard gas being persistent and its action instantaneous, the scope for treatment appears to be distinctly limited. Yet irrigation has some value by minimising the possibility of a cumulative action. The variety of suggested methods of treatment indicates only too clearly the prevailing confusion. Some would use bland lotions to effect mechanical cleansing; others see virtue in alkaline lotions. Drops of castor oil or paraffin have their advocates, though the wisdom of introducing into the eye substances which act as solvents of mustard gas is doubtful. The weight of opinion is against the use of cocaine or its substitutes to relieve symptoms, as it is generally agreed that cocaine is undesirable because of its devitalising effect on the corneal epithelium. The employment of atropine in cases of corneal involvement is the one positive feature on which there is agreement. Silver preparations to counteract possible secondary infection, though generally recommended, are condemned by some. The use of ointments as suggested by a correspondent[5] in last week's *Journal* is open to serious objection, while his advocacy of keeping the eyes bandaged is contrary to experience and theoretical considerations. There is indeed nothing to be said for any method of treatment which impedes free secretion of the irritating products of a gas burn and tends to keep the gas pent up in the eye. Bonnefon's[6] recommendation of procedures, such as irrigation by hypertonic lotions, which aim at an increased flow of secretion is physiologically more sound.

"The lack of agreement of views extends even to the question of gas masks. One difficulty is the reduced field of vision induced by eye-pieces in some of the more elaborate masks. The wearing of glasses with most forms of mask is uncomfortable, apart from rendering the masks ineffective from disturbed fitting. Specially made spectacle frames of reduced size and white metal do not overcome the disadvantage of moisture settling on the lenses, for the spectacles tend to disturb any anti-dimming substances applied to

[1] *Die Enstehung der Entzündung*, Leipzig, 1891, p. 338.

[2] *The Medical Aspects of Mustard Gas Poisoning*, London, 1919, p. 123. By A. S. Warthin and C. V. Weller.

[3] *British Medical Journal*, 1939. **2.** 846.

[4] *Ibid.*, 1939. **2.** 641.

[5] *Ibid.*, 881.

[6] *Gaz. hebd. Sci. méd.*, 1939. **60.** 168; *Siècle méd.*, 1939, September 1.

the lenses or eye-pieces of the mask. From a careful survey of various possible devices for the individual compelled to wear glasses with his mask, Cot, Moynier, Genaud, and Robert conclude that the best procedure is the incorporation into the gas-mask of two separate wire rims each carrying a lens. This arrangement is easily fitted into the standard gas mask used in France, but would not appear to be suitable for the corresponding model in this country."

Correspondence

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

The views expressed in letters addressed to the Editor represent the personal view of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

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VICTORIA VETERINARY BENEVOLENT FUND

Christmas Appeal

To the Editor of the Veterinary Record

Sir, — Will you please allow me the privilege of your columns to appeal for gifts to enable the Victoria Veterinary Benevolent Fund to send a little extra money at Christmas to the widows and orphans we are helping? There are 41 recipients on our list, of whom seven are widows with young children. There are in all 34 children under age, and of these 24 are under 16. At the other end of the scale there are 12 recipients over 70 years of age whose only other income is the Old Age Pension.

I know that a number of practitioners must have been hard hit by the war, but I am sure there are many who can still spare a little for benevolence, and who will be glad to have an opportunity of helping us to give some extra grant this winter to both old and young dependants of the fund. We have usually been able to send £1 and in some cases £2, and there is no doubt that these gifts bring great pleasure to people in whose lives there can be little comfort.

Donations should be sent to the Secretary, Dr. Fred Bullock, at 30, Park Lane, Wembley.

J. W. Brittlebank, *President.*

A year ago the brougham was an easy buy at £3, and at that figure supplied the wheels and undercarriage for many a useful light dray. To-day the horse has come back into his own and from the cobwebbed sanctuary of many a squire's manor house and country rectory victorias, broughams, governess carts, traps and pony tubs are emerging to be swept and garnished and sold at a great price. After all, one efficient horse-power between the shafts is worth many a problematic one beneath the bonnet with an empty petrol tank.—*Farmers' Weekly.*

DISEASES OF ANIMALS ACTS, 1894 to 1937, and AGRICULTURE ACT of 1937 (PART IV)

SUMMARY OF RETURNS

Period.	Anthrax.		Foot-and-Mouth Disease.		Parasitic§ Mange.		Sheep Scab.	Swine Fever.	
	Out-breaks con-firmed.	Animals attacked.	Out-breaks con-firmed.	Animals slaugh-tered as diseased or ex-posed to infection.	Out-breaks con-firmed.	Animals attacked.	Out-breaks con-firmed.	Out-breaks con-firmed.	Swine slaugh-tered.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Period 1st to 15th Nov., 1939	20	23	3	1,098	—	—	10	225	178
Corresponding period in 1938	36	49	4	449	1	1	25	89	62
1937	28	33	40	7,432	3	4	31	40	9
1936	14	17	2	191	—	—	13	52	15
Total 1st January to 15th Nov., 1939	645	731	85	10,670	32	72	224	2,777	1,789
Corresponding period in 1938	716	1,109	169	21,261	45	75	155	741	575
1937	608	734	76	14,001	104	143	206	910	551
1936	388	457	23	2,728	99	241	188	1,683	1,172

Note.—The figures for the current year are approximate only.

§ Excluding outbreaks in Army Horses.